

## SEQUENCE LISTING

<110> Takeda Chemical Industries, Ltd.

## <120> Novel Screening Method

<130> 3067W00P

<150> JP 2002-173798

<151> 2002-06-14

<150> JP 2002-205470

<151> 2002-07-15

<160> 24

<210> 1

<211> 351

<212> PRT

<213> Human

<400> 1

|            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Met        | Glu        | Thr        | Asn        | Phe<br>5   | Ser        | Thr        | Pro        | Leu        | Asn<br>10  | Glu        | Tyr        | Glu        | Glu        | Val<br>15  | Ser        |
| Tyr        | Glu        | Ser        | Ala<br>20  | Gly        | Tyr        | Thr        | Val        | Leu<br>25  | Arg        | Ile        | Leu        | Pro        | Leu<br>30  | Val        | Val        |
| Leu        | Gly        | Val<br>35  | Thr        | Phe        | Val        | Leu        | Gly<br>40  | Val        | Leu        | Gly        | Asn<br>45  | Gly        | Leu        | Val        | Ile        |
| Trp        | Val<br>50  | Ala        | Gly        | Phe        | Arg        | Met<br>55  | Thr        | Arg        | Thr        | Val        | Thr<br>60  | Thr        | Ile        | Cys        | Tyr        |
| Leu<br>65  | Asn        | Leu        | Ala        | Leu        | Ala<br>70  | Asp        | Phe        | Ser        | Phe        | Thr<br>75  | Ala        | Thr        | Leu        | Pro        | Phe<br>80  |
| Leu        | Ile        | Val        | Ser        | Met<br>85  | Ala        | Met        | Gly        | Glu        | Lys<br>90  | Trp        | Pro        | Phe        | Gly        | Trp<br>95  | Phe        |
| Leu        | Cys        | Lys        | Leu<br>100 | Ile        | His        | Ile        | Val        | Val<br>105 | Asp        | Ile        | Asn        | Leu        | Phe        | Gly        | Ser        |
| Val        | Phe        | Leu<br>115 | Ile        | Gly        | Phe        | Ile        | Ala<br>120 | Leu        | Asp        | Arg        | Cys        | Ile<br>125 | Cys        | Val        | Leu        |
| His        | Pro<br>130 | Val        | Trp        | Ala        | Gln        | Asn<br>135 | His        | Arg        | Thr        | Val        | Ser<br>140 | Leu        | Ala        | Met        | Lys        |
| Val<br>145 | Ile        | Val        | Gly        | Pro        | Trp<br>150 | Ile        | Leu        | Ala        | Leu        | Val<br>155 | Leu        | Thr        | Leu        | Pro        | Val<br>160 |
| Phe        | Leu        | Phe        | Leu        | Thr<br>165 | Thr        | Val        | Thr        | Ile        | Pro<br>170 | Asn        | Gly        | Asp        | Thr        | Tyr<br>175 | Cys        |
| Thr        | Phe        | Asn        | Phe<br>180 | Ala        | Ser        | Trp        | Gly        | Gly<br>185 | Thr        | Pro        | Glu        | Glu        | Arg<br>190 | Leu        | Lys        |
| Val        | Ala<br>195 | Ile        | Thr        | Met        | Leu        | Thr        | Ala<br>200 | Arg        | Gly        | Ile        | Ile<br>205 | Arg        | Phe        | Val        | Ile        |
| Gly        | Phe<br>210 | Ser        | Leu        | Pro        | Met        | Ser<br>215 | Ile        | Val        | Ala        | Ile        | Cys<br>220 | Tyr        | Gly        | Leu        | Ile        |
| Ala<br>225 | Ala        | Lys        | Ile        | His        | Lys<br>230 | Lys        | Gly        | Met        | Ile        | Lys<br>235 | Ser        | Ser        | Arg        | Pro        | Leu<br>240 |
| Arg        | Val        | Leu        | Thr        | Ala<br>245 | Val        | Val        | Ala        | Ser        | Phe<br>250 | Phe        | Ile        | Cys        | Trp        | Phe<br>255 | Pro        |
| Phe        | Gln        | Leu        | Val<br>260 | Ala        | Leu        | Leu        | Gly        | Thr<br>265 | Val        | Trp        | Leu        | Lys        | Glu<br>270 | Met        | Leu        |
| Phe        | Tyr        | Gly<br>275 | Lys        | Tyr        | Lys        | Ile        | Ile<br>280 | Asp        | Ile        | Leu        | Val        | Asn<br>285 | Pro        | Thr        | Ser        |
| Ser        | Leu<br>290 | Ala        | Phe        | Phe        | Asn        | Ser<br>295 | Cys        | Leu        | Asn        | Pro<br>300 | Met        | Leu        | Tyr        | Val        | Phe        |

Val Gly Gln Asp Phe Arg Glu Arg Leu Ile His Ser Leu Pro Thr Ser  
 305 310 315 320  
 Leu Glu Arg Ala Leu Ser Glu Asp Ser Ala Pro Thr Asn Asp Thr Ala  
 325 330 335  
 Ala Asn Ser Ala Ser Pro Pro Ala Glu Thr Glu Leu Gln Ala Met  
 340 345 350

<210> 2  
 <211> 1053  
 <212> DNA  
 <213> Human

<400> 2  
 atggaaacca acttctccac tcctctgaat gaatatgaag aagtgtccta tgagtctgct 60  
 ggctacactg ttctgcggat cctcccatg gtggtgcttg gggtcacctt tgtcctcggg 120  
 gtcctgggca atgggcttgt gatctgggtg gctggattcc ggatgacacg cacagtcacc 180  
 accatctgtt acctgaacct ggccctggct gacttttctt tcacggccac attaccattc 240  
 ctcatgtct ccatggccat gggagaaaaa tggccttttg gctggttcct gtgtaagtta 300  
 attcacatcg tgggtggacat caacctcttt ggaagtgtct tcttgattgg ttccattgca 360  
 ctggaccgct gcatttgtgt cctgcatcca gtctgggccc agaaccaccg cactgtgagt 420  
 ctggccatga aggtgatcgt cggaccttgg attcttgctc tagtccttac cttgccagtt 480  
 ttctcttttt tgactacagt aactattcca aatggggaca catactgtac tttcaacttt 540  
 gcatcctggg gtggcacccc tgaggagagg ctgaagggtg ccattaccat gctgacagcc 600  
 agagggatta tccggtttgt cattggcttt agcttgccga tgtccattgt tgccatctgc 660  
 tatgggctca ttgcagccaa gatccacaaa aagggcatga ttaaattccag ccgtccctta 720  
 cgggtcctca ctgctgtggt ggcttctttc ttcactctgt gggtttccctt tcaactgggt 780  
 gcccttcttg gcaccgtctg gctcaaagag atgttgttct atggcaagta caaaatcatt 840  
 gacatcctgg ttaacccaac gagctccctg gccttcttca acagctgcct caaccccatg 900  
 ctttacgtct ttgtgggcca agacttccga gagagactga tccactccct gccaccagt 960  
 ctggagaggg ccctgtctga ggactcagcc ccaactaatg acacggctgc caattctgct 1020  
 tcacctctg cagagactga gttacaggca atg 1053

<210> 3  
 <211> 24  
 <212> PRT  
 <213> Human

<400> 3  
 Met Ala Pro Arg Gly Phe Ser Cys Leu Leu Leu Leu Thr Ser Glu Ile  
 1 5 10 15  
 Asp Leu Pro Val Lys Arg Arg Ala  
 20 24

<210> 4  
 <211> 24  
 <212> PRT  
 <213> Human

<400> 4  
 Met Ala Pro Arg Gly Phe Ser Cys Leu Leu Leu Leu Thr Gly Glu Ile  
 1 5 10 15  
 Asp Leu Pro Val Lys Arg Arg Ala  
 20 24

<210> 5  
 <211> 24  
 <212> PRT  
 <213> Human

<400> 5  
Met Ala Arg Arg Gly Phe Ser Cys Leu Leu Leu Ser Thr Thr Ala Thr  
1 5 10 15  
Asp Leu Pro Val Lys Arg Arg Thr  
20

<210> 6  
<211> 21  
<212> PRT  
<213> Human

<400> 6  
Met Ala Pro Arg Gly Phe Ser Cys Leu Leu Leu Leu Thr Ser Glu Ile  
1 5 10 15  
Asp Leu Pro Val Lys  
20 21

<210> 7  
<211> 38  
<212> PRT  
<213> Rat

<400> 7  
Met Ala Lys Arg Gly Phe Asn Cys Leu Leu Leu Ser Ile Ser Glu Ile  
5 10 15  
Asp Leu Pro Val Lys Arg Leu Glu Ser Pro Asn Lys Thr Arg Arg Pro  
20 25 30  
Tyr Gly Ala Ser Ile Tyr  
35 38

<210> 8  
<211> 24  
<212> PRT  
<213> Rat

<400> 8  
Met Ala Lys Arg Gly Phe Asn Cys Leu Leu Leu Ser Ile Ser Glu Ile  
5 10 15  
Asp Leu Pro Val Lys Arg Leu Glu  
20 24

<210> 9  
<211> 21  
<212> PRT  
<213> Rat

<400> 9  
Met Ala Lys Arg Gly Phe Asn Cys Leu Leu Leu Ser Ile Ser Glu Ile  
5 10 15  
Asp Leu Pro Val Lys  
20 21

<210> 10  
<211> 351  
<212> PRT  
<213> Rat

<400> 10  
Met Glu Ala Asn Tyr Ser Ile Pro Leu Asn Val Ser Glu Val Val Val

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
|     |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |  |  |
| Tyr | Asp | Ser | Thr | Ile | Ser | Arg | Val | Leu | Trp | Ile | Leu | Thr | Met | Val | Val |  |  |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |  |  |
| Leu | Ser | Ile | Thr | Phe | Val | Leu | Gly | Val | Leu | Gly | Asn | Gly | Leu | Val | Ile |  |  |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |  |  |
| Trp | Val | Ala | Gly | Phe | Arg | Met | Val | His | Thr | Val | Thr | Thr | Thr | Cys | Phe |  |  |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |  |  |
| Leu | Asn | Leu | Ala | Leu | Ala | Asp | Phe | Ser | Phe | Thr | Val | Thr | Leu | Pro | Phe |  |  |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |  |  |
| Phe | Val | Ile | Ser | Ile | Ala | Met | Lys | Glu | Lys | Trp | Pro | Phe | Gly | Trp | Phe |  |  |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |  |  |
| Leu | Cys | Lys | Leu | Val | His | Ile | Val | Val | Asp | Ile | Asn | Leu | Phe | Gly | Ser |  |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |  |
| Val | Phe | Leu | Ile | Ala | Leu | Ile | Ala | Leu | Asp | Arg | Cys | Ile | Cys | Val | Leu |  |  |
|     | 115 |     |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |  |  |
| His | Pro | Val | Trp | Ala | Gln | Asn | His | Arg | Thr | Val | Ser | Leu | Ala | Arg | Lys |  |  |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |  |  |
| Val | Val | Val | Gly | Pro | Trp | Ile | Leu | Ala | Leu | Ile | Leu | Thr | Leu | Pro | Ile |  |  |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |  |  |
| Phe | Ile | Phe | Met | Thr | Thr | Val | Arg | Ile | Pro | Gly | Gly | Asn | Val | Tyr | Cys |  |  |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |  |  |
| Thr | Phe | Asn | Phe | Ala | Ser | Trp | Gly | Asn | Thr | Ala | Glu | Glu | Leu | Leu | Asn |  |  |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |  |  |
| Ile | Ala | Asn | Thr | Phe | Val | Thr | Val | Arg | Gly | Ser | Ile | Arg | Phe | Ile | Ile |  |  |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |  |  |
| Gly | Phe | Ile | Met | Pro | Met | Ser | Ile | Val | Ala | Ile | Cys | Tyr | Gly | Leu | Ile |  |  |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |  |
| Ala | Val | Lys | Ile | His | Arg | Arg | Ala | Leu | Val | Asn | Ser | Ser | Arg | Pro | Leu |  |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |  |
| Arg | Val | Leu | Thr | Ala | Val | Val | Ala | Ser | Phe | Phe | Ile | Cys | Trp | Phe | Pro |  |  |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     |     | 255 |     |  |  |
| Phe | Gln | Leu | Val | Ala | Leu | Leu | Gly | Thr | Ile | Trp | Phe | Lys | Glu | Ser | Leu |  |  |
|     |     | 260 |     |     |     |     | 265 |     |     |     |     |     | 270 |     |     |  |  |
| Phe | Ser | Gly | Arg | Tyr | Lys | Ile | Leu | Asp | Met | Trp | Val | His | Pro | Thr | Ser |  |  |
|     | 275 |     |     |     |     | 280 |     |     |     |     |     | 285 |     |     |     |  |  |
| Ser | Leu | Ala | Tyr | Phe | Asn | Ser | Cys | Leu | Asn | Pro | Met | Leu | Tyr | Ala | Phe |  |  |
|     | 290 |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |     |  |  |
| Met | Gly | Gln | Asp | Phe | His | Glu | Arg | Leu | Ile | His | Ser | Leu | Pro | Ser | Ser |  |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |  |
| Leu | Glu | Arg | Ala | Leu | Ser | Glu | Asp | Ser | Gly | Gln | Thr | Ser | Asp | Thr | Gly |  |  |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     |     | 335 |     |  |  |
| Ile | Ser | Ser | Ala | Leu | Pro | Pro | Val | Asn | Ile | Asp | Ile | Lys | Ala | Ile |     |  |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |  |

<210> 11

<211> 1053

<212> DNA

<213> Rat

<400> 11

|            |            |            |            |             |             |     |
|------------|------------|------------|------------|-------------|-------------|-----|
| atggaagcca | actattccat | ccctctgaat | gtatcagaag | tggttgctcta | tgattctacc  | 60  |
| atctccagag | ttttgtggat | cctcacaatg | gtggttctct | ccatcacctt  | tgctcctgggt | 120 |
| gtgctgggta | atggactagt | gatctgggta | gctggattcc | ggatggtaca  | cactgtcacc  | 180 |
| actacctgtt | ttctgaatct | agctttggct | gacttctctt | tcacagtgc   | tctaccattc  | 240 |
| tttgtcatct | caattgctat | gaaagaaaaa | tggccttttg | gatggttcct  | gtgtaaatta  | 300 |
| gttcacattg | tagtagacat | aaacctcttt | ggaagtgtct | tcctgattgc  | tttaattgcc  | 360 |
| ttggaccgct | gcatttgtgt | cctgcatcca | gtctgggctc | agaaccaccg  | cactgtgagc  | 420 |
| ctggctagga | aggtggttgt | tgggccctgg | attttagctc | tgattctcac  | tttgccatt   | 480 |
| tttattttca | tgactacagt | tagaattcct | ggaggcaatg | tgtactgtac  | attcaacttc  | 540 |

```

gcacccctggg gtaacactgc tgaagaacta ttgaacatag ctaacacttt tgtaacagtt 600
agaggagagca tcagggttcat tattggcttc ataatgccta tgtccattgt tgccatctgc 660
tatggactca tcgctgtcaa gatccacaga agagcacttg ttaattccag ccgtccatta 720
agagtcctta cagcagttgt ggcttccttc tttatctgtt gggttccctt tcaactgggtg 780
gcccttttag gtacaatctg gtttaaagag tcattgttta gtggtcgtta caaaattctt 840
gacatgtggg ttcacccaac cagctcattg gcctacttca atagttgcct caatccaatg 900
ctctatgctt tcatgggcca ggactttcat gaaagactga ttcattccct gccttccagt 960
ctggagagag ccctgagtga ggactctggc caaaccagtg atacaggcat cagttctgct 1020
ttacctctg taaacattga tataaaagca ata 1053

```

<210> 12  
 <211> 351  
 <212> PRT  
 <213> Mouse

```

<400> 12
Met Glu Ser Asn Tyr Ser Ile His Leu Asn Gly Ser Glu Val Val Val
      5      10      15
Tyr Asp Ser Thr Ile Ser Arg Val Leu Trp Ile Leu Ser Met Val Val
      20      25      30
Val Ser Ile Thr Phe Phe Leu Gly Val Leu Gly Asn Gly Leu Val Ile
      35      40      45
Trp Val Ala Gly Phe Arg Met Pro His Thr Val Thr Thr Ile Trp Tyr
      50      55      60
Leu Asn Leu Ala Leu Ala Asp Phe Ser Phe Thr Ala Thr Leu Pro Phe
      65      70      75      80
Leu Leu Val Glu Met Ala Met Lys Glu Lys Trp Pro Phe Gly Trp Phe
      85      90      95
Leu Cys Lys Leu Val His Ile Val Val Asp Val Asn Leu Phe Gly Ser
      100      105      110
Val Phe Leu Ile Ala Leu Ile Ala Leu Asp Arg Cys Ile Cys Val Leu
      115      120      125
His Pro Val Trp Ala Gln Asn His Arg Thr Val Ser Leu Ala Arg Lys
      130      135      140
Val Val Val Gly Pro Trp Ile Phe Ala Leu Ile Leu Thr Leu Pro Ile
      145      150      155      160
Phe Ile Phe Leu Thr Thr Val Arg Ile Pro Gly Gly Asp Val Tyr Cys
      165      170      175
Thr Phe Asn Phe Gly Ser Trp Ala Gln Thr Asp Glu Glu Lys Leu Asn
      180      185      190
Thr Ala Ile Thr Phe Val Thr Thr Arg Gly Ile Ile Arg Phe Leu Ile
      195      200      205
Gly Phe Ser Met Pro Met Ser Ile Val Ala Val Cys Tyr Gly Leu Ile
      210      215      220
Ala Val Lys Ile Asn Arg Arg Asn Leu Val Asn Ser Ser Arg Pro Leu
      225      230      235      240
Arg Val Leu Thr Ala Val Val Ala Ser Phe Phe Ile Cys Trp Phe Pro
      245      250      255
Phe Gln Leu Val Ala Leu Leu Gly Thr Val Trp Phe Lys Glu Thr Leu
      260      265      270
Leu Ser Gly Ser Tyr Lys Ile Leu Asp Met Phe Val Asn Pro Thr Ser
      275      280      285
Ser Leu Ala Tyr Phe Asn Ser Cys Leu Asn Pro Met Leu Tyr Val Phe
      290      295      300
Met Gly Gln Asp Phe Arg Glu Arg Phe Ile His Ser Leu Pro Tyr Ser
      305      310      315      320
Leu Glu Arg Ala Leu Ser Glu Asp Ser Gly Gln Thr Ser Asp Ser Ser
      325      330      335
Thr Ser Ser Thr Ser Pro Pro Ala Asp Ile Glu Leu Lys Ala Pro

```

340

345

350

<210> 13  
 <211> 1053  
 <212> DNA  
 <213> Mouse

<400> 13  
 atggaatcca actactccat ccatctgaat ggatcagaag tgggtggttta tgattctacc 60  
 atctccagag ttctgtggat cctctcaatg gtgggtgtct ccatcacttt cttccttggt 120  
 gtgctgggca atggactagt gatttgggta gctggattcc ggatgccaca cactgtcacc 180  
 actatctggg atctgaatct agcattggct gacttttctt tcacagcaac tctaccattc 240  
 cttcttggtg aaatggctat gaaagaaaaa tggccttttg gctggttcct gtgtaaatta 300  
 gttcacattg tggtagatgt aaacctgttt ggaagtgtct tcttgattgc tctcattgcc 360  
 ttggaccgct gcatttgtgt tctgcatcca gtctgggctc agaaccaccg cactgtgagc 420  
 ctggctagga aggtggttgt tgggccctgg atttttgctc tgattctcac tttgcccatt 480  
 tttattttct tgactactgt tagaattcct ggaggagatg tgtattgtac attcaacttt 540  
 ggatcctggg ctcaaactga tgaagaaaag ttgaacacag ctatcacttt tgtaacaact 600  
 agagggatca tcaggttcct tattggtttc agcatgccca tgtcaattgt tgctgtttgc 660  
 tatggactca ttgctgtcaa gatcaacaga agaaaccttg ttaattccag ccgtccttta 720  
 cgagtcctta cagcagttgt ggcttccttc tttatctgct gggttccctt tcagcttggtg 780  
 gcccttttgg gcacagtctg gtttaaagag acattgctta gtggtagtta taaaattctt 840  
 gacatgtttg ttaacccaac aagctcattg gcttacttca atagttgtct caatccgatg 900  
 ctctatgttt tcatgggcca ggactttcgt gagagattta ttcattccct gccttatagt 960  
 cttgagagag ccctgagtga ggattctggg caaaccagtg attcaagcac cagttctact 1020  
 tcacctctg cagacattga gttaaaggcc cca 1053

<210> 14  
 <211> 353  
 <212> PRT  
 <213> Human

<400> 14  
 Met Glu Thr Asn Phe Ser Ile Pro Leu Asn Glu Thr Glu Glu Val Leu  
                   5                  10                  15  
 Pro Glu Pro Ala Gly His Thr Val Leu Trp Ile Phe Ser Leu Leu Val  
                   20                  25                  30  
 His Gly Val Thr Phe Val Phe Gly Val Leu Gly Asn Gly Leu Val Ile  
                   35                  40                  45  
 Trp Val Ala Gly Phe Arg Met Thr Arg Thr Val Asn Thr Ile Cys Tyr  
                   50                  55                  60  
 Leu Asn Leu Ala Leu Ala Asp Phe Ser Phe Ser Ala Ile Leu Pro Phe  
                   65                  70                  75                  80  
 Arg Met Val Ser Val Ala Met Arg Glu Lys Trp Pro Phe Ala Ser Phe  
                   85                  90                  95  
 Leu Cys Lys Leu Val His Val Met Ile Asp Ile Asn Leu Phe Val Ser  
                   100                  105                  110  
 Val Tyr Leu Ile Thr Ile Ile Ala Leu Asp Arg Cys Ile Cys Val Leu  
                   115                  120                  125  
 His Pro Ala Trp Ala Gln Asn His Arg Thr Met Ser Leu Ala Lys Arg  
                   130                  135                  140  
 Val Met Thr Gly Leu Trp Ile Phe Thr Ile Val Leu Thr Leu Pro Asn  
                   145                  150                  155                  160  
 Phe Ile Phe Trp Thr Thr Ile Ser Thr Thr Asn Gly Asp Thr Tyr Cys  
                   165                  170                  175  
 Ile Phe Asn Phe Ala Phe Trp Gly Asp Thr Ala Val Glu Arg Leu Asn  
                   180                  185                  190  
 Val Phe Ile Thr Met Ala Lys Val Phe Leu Ile Leu His Phe Ile Ile  
                   195                  200                  205

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Phe | Thr | Val | Pro | Met | Ser | Ile | Ile | Thr | Val | Cys | Tyr | Gly | Ile | Ile |
| 210 |     |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Ala | Ala | Lys | Ile | His | Arg | Asn | His | Met | Ile | Lys | Ser | Ser | Arg | Pro | Leu |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |     |
| Arg | Val | Phe | Ala | Ala | Val | Val | Ala | Ser | Phe | Phe | Ile | Cys | Trp | Phe | Pro |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Tyr | Glu | Leu | Ile | Gly | Ile | Leu | Met | Ala | Val | Trp | Leu | Lys | Glu | Met | Leu |
|     |     | 260 |     |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Leu | Asn | Gly | Lys | Tyr | Lys | Ile | Ile | Leu | Val | Leu | Ile | Asn | Pro | Thr | Ser |
|     | 275 |     |     |     |     | 280 |     |     |     |     |     | 285 |     |     |     |
| Ser | Leu | Ala | Phe | Phe | Asn | Ser | Cys | Leu | Asn | Pro | Ile | Leu | Tyr | Val | Phe |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Met | Gly | Arg | Asn | Phe | Gln | Glu | Arg | Leu | Ile | Arg | Ser | Leu | Pro | Thr | Ser |
| 305 |     |     |     | 310 |     |     |     |     |     | 315 |     |     |     | 320 |     |
| Leu | Glu | Arg | Ala | Leu | Thr | Glu | Val | Pro | Asp | Ser | Ala | Gln | Thr | Ser | Asn |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Thr | His | Thr | Thr | Ser | Ala | Ser | Pro | Pro | Glu | Glu | Thr | Glu | Leu | Gln | Ala |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |

Met

<210> 15  
 <211> 1059  
 <212> DNA  
 <213> Human

<400> 15

|            |             |            |             |            |             |      |
|------------|-------------|------------|-------------|------------|-------------|------|
| atggaaacca | acttctccat  | tcctctgaat | gaaactgagg  | aggtgctccc | tgagcctgct  | 60   |
| ggccacaccg | ttctgtggat  | cttctcattg | ctagtccacg  | gagtcacctt | tgtcttcggg  | 120  |
| gtcctgggca | atgggcttgt  | gatctgggtg | gctggattcc  | ggatgacacg | cacagtcaac  | 180  |
| accatctggt | acctgaacct  | ggccctagct | gacttctctt  | tcagtgccat | cctaccattc  | 240  |
| cgaatggtct | cagtcgccat  | gagagaaaaa | tggccttttg  | cgtcattcct | atgtaagtta  | 300  |
| gttcatgtta | tgatagacat  | caacctgttt | gtcagtgtct  | acctgatcac | catcattgct  | 360  |
| ctggaccgct | gtatttgtgt  | cctgcatcca | gcctgggccc  | agaaccatcg | caccatgagt  | 420  |
| ctggccaaga | gggtgatgac  | gggactctgg | attttcacca  | tagtccttac | cttaccaaat  | 480  |
| ttcatcttct | ggactacaat  | aagtactacg | aatggggaca  | catactgtat | tttcaacttt  | 540  |
| gcattctggg | gtgacactgc  | tgtagagagg | ttgaacgtgt  | tcattaccat | ggccaagggtc | 600  |
| tttctgatcc | tccacttcac  | tattggcttc | acgggtgccta | tgtccatcat | cacagtctgc  | 660  |
| tatgggatca | tcgctgccaa  | aattcacaga | aaccacatga  | ttaaatccag | ccgtccctta  | 720  |
| cgtgtcttcg | ctgctgtggt  | ggcttctttc | ttcatctggt  | ggttccctta | tgaactaatt  | 780  |
| ggcattctaa | tggcagtcctg | gctcaaagag | atgttggttaa | atggcaaata | caaaatcatt  | 840  |
| cttgtcctga | ttaacccaac  | aagctccttg | gcctttttta  | acagctgcct | caacccaatt  | 900  |
| ctctacgtct | ttatgggtcg  | taacttccaa | gaaagactga  | ttcgctcttt | gccactagt   | 960  |
| ttggagaggg | ccctgactga  | ggccctgac  | tcagcccaga  | ccagcaacac | acacaccact  | 1020 |
| tctgcttcac | ctcctgagga  | gacggagtta | caagcaatg   |            |             | 1059 |

<210> 16  
 <211> 42  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer

<400> 16  
 aaacagtcga ccaccatgga atccaactac tccatccatc tg 42

<210> 17  
 <211> 33  
 <212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 17

ctttctagat catggggcct ttaactcaat gtc 33

<210> 18

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 18

atctgggtag ctggattccg gatg 24

<210> 19

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 19

tctttcatga aagtcctggc ccatgaa 27

<210> 20

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 20

aggaattcta actgtagtca tgaa 24

<210> 21

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 21

acagttagag ggagcatcag gttc 24

<210> 22

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 22  
ataaagtcga ccaccatgga agccaactat tccatccctc tga 43

<210> 23  
<211> 37  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Primer

<400> 23  
aaatctagat catattgctt ttatatcaat gtttaca 37

<210> 24  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Primer

<400> 24  
Trp Lys Tyr Met Val Met  
1 5